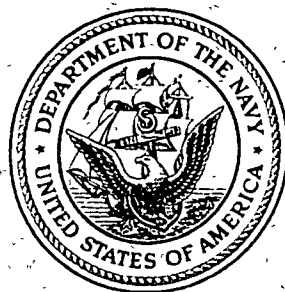


Environmental Permits Report
for
Pilot Study
Air Sparging/Vapor Extraction
System
Naval Weapons Industrial Reserve
Plant (NWIRP)
Calverton, New York



Northern Division
Naval Facilities Engineering Command
Contract Number N62472-90-D-1298
Contract Task Order 0223

June 1995

CF BRAUN ENGINEERING CORPORATION

**ENVIRONMENTAL PERMITS REPORT
FOR
PILOT STUDY
AIR SPARGING / VAPOR EXTRACTION SYSTEM
FOR
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP)
CALVERTON NEW YORK**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

**Submitted to:
Northern Division
Environmental Branch Code 18
Naval Facilities Engineering Command
10 Industrial Highway, Mall Stop #82
Lester, Pennsylvania 19113-2090**

**Submitted by:
C F Braun Engineering Corporation
993 Old Eagle School Road, Suite 415
Wayne, Pennsylvania 19087-1710**

**CONTRACT NUMBER N62472-90-D-1298
CONTRACT TASK ORDER 0223**

JUNE 1995

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- A NYSDEC Letter dated April 5, 1995

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1.0 INTRODUCTION

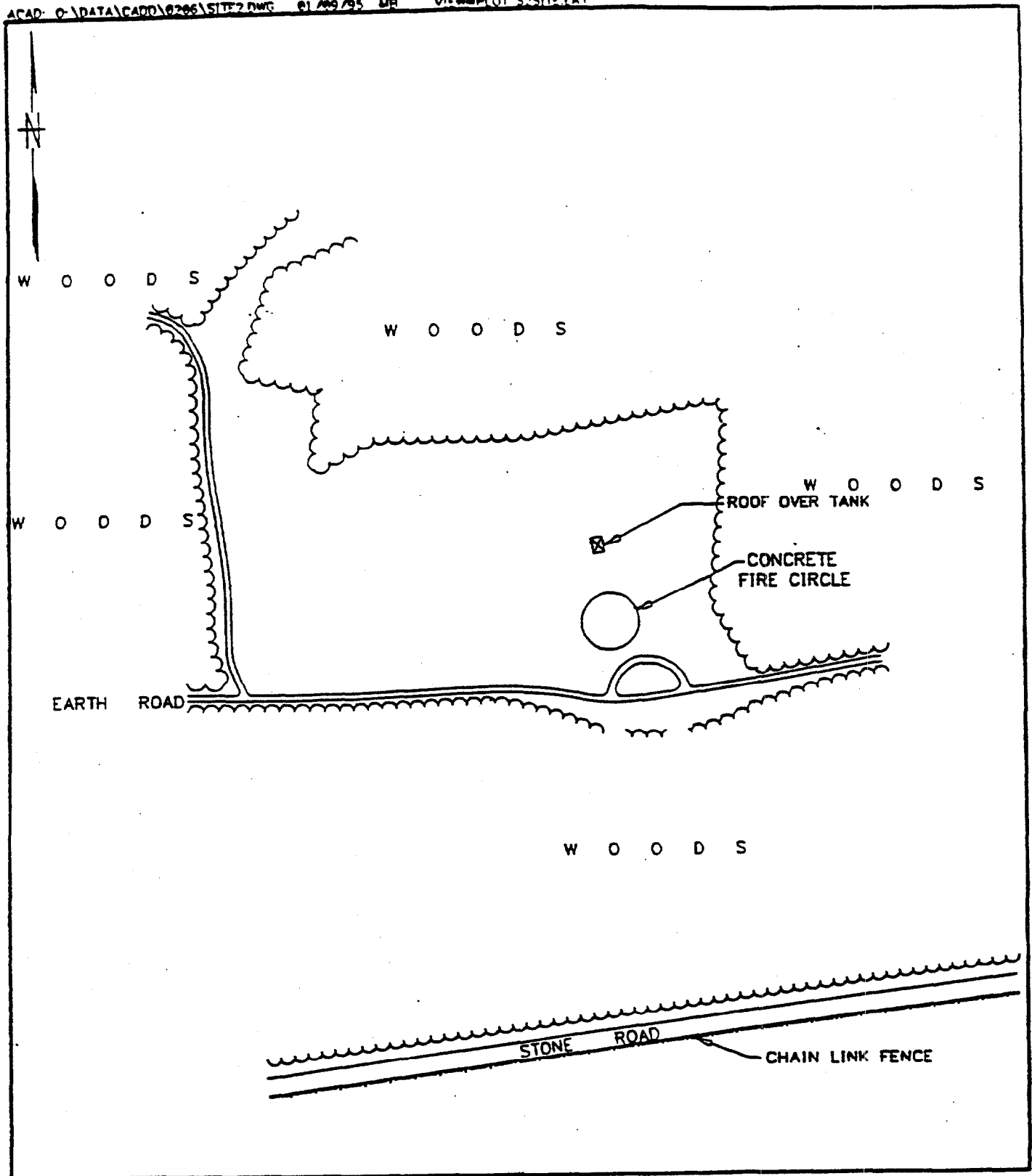
The Northern Division of the Naval Facilities Engineering Command has issued Contract Task Order (CTO) 0223 to C F Braun Engineering Corporation under a master agreement with Halliburton NUS Corporation under Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract N62472-90-D-1298. Under CTO 223, C. F. Braun will design and install a pilot-scale air sparging/soil vapor extraction system to remediate soil and groundwater contamination at the Fire Training Area, Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, New York. This Environmental Permits Report will identify Federal, state and local regulations that may apply to this remediation effort. The report will also outline the procedures for complying with all applicable regulations.

1.1 BACKGROUND INFORMATION

1.1.1 The Fire Training Area

The Fire Training Area (Site 2) is contained within a 9-acre clearing and is located in the south-central portion of the NWIRP (Figure 1-1). Site 2 is currently comprised of a 1,000-gallon, above-ground fuel storage tank and a 80-foot diameter, concrete, fire training pit. The concrete pit is surrounded by an 8-inch high, concrete curb. Beginning in 1982, waste fuels, waste oils and waste solvents were ignited within the concrete pit. In practice drills, NWIRP fire training teams would then use Aqueous Fire Fitting Foams (AFFF), gaseous Halon 1301, various dry chemicals or water to extinguish the fires. Between 1952 and 1982, training fires using the same fuel sources were ignited at Site 2 in earthen pits surrounded by earthen berms. During this earlier period, the fuels were stored at Site 2 in a 6,000-gallon underground storage tank.

In August 1982, a fuel spill of slightly less than 6,000 gallons occurred at the underground storage tank. In 1983, approximately 300 gallons of No. 2 fuel oil leaked from the supply line attached to the 1,000-gallon, above-ground fuel storage tank. Field sampling of the subsurface conditions at the Fire Training Area indicated that both subsurface soils and the shallow groundwater had been contaminated. Hazardous compounds detected in the soil and groundwater samples collected at Site 2 included: petroleum; oils; lubricants; waste solvents such as toluene, methyl-ethyl ketone and lacquer thinner. Other compounds detected in the subsurface samples included metals and PCB's, however, the concentrations and the quantities of these compounds were considered to be minor when compared to the detected subsurface concentrations of volatile organic compounds (VOCs) and hydrocarbons.



SITE LAYOUT MAP
SITE 2 - FIRE TRAINING AREA
NWIRP. CALVERTON, NY



FIGURE 1-1

C.F. BRAUN

1.2 REPORT PURPOSE

In-situ treatment of the VOCs shall be conducted using air sparging/soil vapor extraction (AS/SVE). Significant activities related to installation and operation of the AS/SVE system at Site 2 are outlined in Section 2.0. This report shall review applicable permits and permit filing procedures associated with installation and operation of the AS/SVE system at Site 2. This review is provided in Section 3.0.

2.0 SYSTEM INSTALLATION AND OPERATION

2.1 TREATMENT OBJECTIVE

Subsurface soil and groundwater at Site 2 are contaminated with VOCs. Analytical results for soil and groundwater samples collected at Site 2 confirm that many contaminant concentrations exceed established Published Remediation Goals (PRGs) and Minimum Contaminant Levels (MCLs) for soil and groundwater, respectively. The air sparging/soil vapor extraction (AS/SVE) system will be installed and operated at Site 2 in order to reduce subsurface contaminant concentrations to established PRGs and MCLs.

2.2 TREATMENT DESCRIPTION

The following steps shall be taken during installation and operation of the AS/SVE system in order to achieve the treatment objective.

- **General Site Preparation:** The section of Site 2 that will contain air injection and air extraction wells will be cleared of all surface debris. Only minimal clearing activities are anticipated as the area of concern is relatively free of debris.
- **Well Installation:** Two-inch-diameter PVC, air injection and air extraction wells will be installed in the treatment area by using standard hollow-stem drilling procedures. Injection wells will be installed into the top 6- to 7-foot portion of the aquifer. On average, the air injection wells will extend approximately 23 feet below the ground surface. Only the sections of the injection wells that penetrate the aquifer will be screened. The air extraction wells will not penetrate the aquifer. All air extraction wells will extend 8 feet below the ground surface. The screened sections of the air extraction wells will be located in the overlying vadose zone of soil.
- **Soil Borings:** Three soil borings will be completed in the Fire Training Area. Split-spoon samples will be collected from each of the 3 borings at depths of 1 to 2 feet and at the upper interface of the shallow aquifer.

- **System Operation:** Air injection and air extraction blowers will operate continuously at Site 2 for approximately 4 months. Subsurface air collected by the extraction wells will be passed through primary and secondary water separators before being treated by activated carbon filtration. Treated air will be passed into the atmosphere following carbon treatment. Injected and extracted air will be periodically sampled from various points along the flow lines, and the necessary system adjustments will be made in order to comply with all established Federal, state and local operating parameters.

3.0 REQUIRED DOCUMENTATION

Table 3-1 presents a Project Documentation Checklist that contains a evaluation of Federal, state and local permits, licenses and certificates that may be applied to in-situ treatment of VOC contamination at Site 2 by the AS/SVE system. Based on this evaluation the following conclusions may be made:

No filing fees will be required in order to operate the AS/SVE system at Site 2.

3.1 FEDERAL REQUIREMENTS

Off-gas emissions generated during operation of the soil vapor extraction unit will be regulated by Federal new source performance standards contained in 40 CFR Part 60, and the national emissions standards for hazardous air pollutants contained in 40 CFR Part 61. No Federal permits will be required for this project.

3.2 STATE REQUIREMENTS

Off-gas emissions generated during operation of the soil vapor extraction unit will be regulated by the New York State Department of Environmental Conservation regulations for prevention and control of air contamination and air pollution contained in Title 6, Chapter III, Subchapter A; and the air quality classifications for Suffolk County contained in Title 6, Chapter III, Subchapter C, Part 307. Because this is a pilot-scale AS/SVE system with granular activated carbon air emissions treatment, the enclosed release from state permit filing requirements (Appendix A) may be applied to the Fire Training Area at the Calverton site. Therefore, no state permits will be required for this project.

3.3 LOCAL REQUIREMENTS

No local regulations are applicable to the installation and operation of the AS/SVE system at the NWIRP Calverton, New York.

TABLE 3-1

**PROJECT DOCUMENTATION CHECKLIST - SITE 2
CALVERTON, NEW YORK**

Activity	Type of Permit/License/Certification	Issuing Agency	Applicability	Reason
Stationary Air Emission Source	Permit to Construct/Permit to Operate	State	Applicable	Air emission of regulated wastes will be maintained below established levels. (See Section 4.0).
Hazardous Air Pollutant (HAP) Emission Source	HAP Emission Statement	State	Applicable	Air emissions of hazardous air pollutants will be maintained below established limits. (See Section 4.0).
Floodplain Management Regulations Development	Development Permit	State	Not Applicable	Excavation will not occur in the 100-year floodplain. A permit is not required.
Wastewater Discharge to "Waters of the U.S."	Permit-to-Discharge (SPDES or NPDES)	State or EPA	Not Applicable	NPDES or SPDES permits will not be required. Wastewaters will not be discharged.
Wastewater Discharge to Sewer	Sewer-Use Permit	State or Local	Not Applicable	No wastewater discharges to a public sewer system will occur.
Potable Water Treatment	Permit-to-Operate	State	Not Applicable	Water is not being treated for potable use.
Underground Injection for Waste Disposal	Permit-to-Operate	State or EPA	Not Applicable	Underground Injection will not be performed.
Ocean Dumping	Permit-to-Dump	EPA	Not Applicable	Ocean Dumping will not be performed.
Dredging	Dredge-Fill Permit Ocean Disposal Permit State Water Quality Cert.	COE COE State	Not Applicable	Dredging is not being performed.
Structure in Navigable Waters	Section 10 Permit	COE	Not Applicable	Structures are not being built in navigable waters.

TABLE 3-1 (Continued)
PROJECT DOCUMENTATION CHECKLIST - SITE 2
CALVERTON, NEW YORK

Activity	Type of Permit/License/Certification	Issuing Agency	Applicability	Reason
Stormwater Discharge to "Waters of the U.S."	Permit-to-Construct/Modify Source	State	Not Applicable	No stormwater will be discharged to "Waters of the U.S."
Earth-Moving Operations	Permit to Construct/Erosion and Sediment Control Plan	State	Not Applicable	Site 1 and Site 2 construction will disturb less than the 5-acre limit specified by New York regulations.
Fill Wetlands	Dredge/Fill Permit State Water Quality Cert. State Wetland Permit	COE State	Not Applicable	The project is not proposing to fill in a wetlands area.
Hazardous and Non-Hazardous Waste Landfills	Permit-to-Operate	State	Not Applicable	A hazardous waste landfill is not being constructed or operated.
Hazardous Waste Generation	EPA Identification Number	State	Not Applicable	No hazardous waste will be generated during operation of the AS/SVE system at Site 2.
Waste Transport (VOC-contaminated waste)	Form 8700-22	EPA or State	Applicable	No hazardous waste will be transported from Site 2.
Disposal of VOC-contaminated soil	Notification of Authorization of Disposal Certification of Disposal	State	Applicable	No contaminated wastes will be disposed of off site.
Hazardous Waste Treatment, Storage, Disposal	Permit-to-Construct Permit-to-Operate (Part B Permit)	State or EPA	Not Applicable	The generator is not operating a treatment, storage, or disposal facility.
Underground Storage Tanks	Permit-to-Construct Permit-to-Operate	State or EPA	Not Applicable	No underground tanks exist within this project.
Pesticide Application	Applicator Certification	DOD	Not Applicable	Pesticides will not be used.

4.0 COMPLIANCE

4.1 AIR EMISSIONS

The pilot-scale AS/SVE system will collect and remove VOCs from the soil and groundwater at the Fire Training Area. Air containing concentrations of VOCs will be passed through a series of granular activated carbon (GAC) treatment drums prior to offgas emission to the atmosphere. The air inlet and outlet lines from the GAC drums will be periodically monitored to assure continuous compliance with the state emissions limits for VOCs listed below.

Degree of air cleaning required for process emission sources emitting volatile organic compounds in the New York City Metropolitan Area.*

EMISSION RATE POTENTIAL (lb/hr)

Environmental Rating	Less than 1.0	1.0 to 3.5	Greater than 3.5
A	<fn*>	99% or greater or best available control technology.	
B or C		<fn*>	Reasonably available control technology
D	No Air cleaning required.		Reasonably available control technology.

<FN*>Degree of air cleaning required will be specified by the commissioner.

Environmental Rating*

Rating	Criteria
A	An air contaminant whose discharge results, or may result, in a serious adverse effects on receptors or the environment. These effects may be of a health, economic or aesthetic nature or any combination of these.

- B** An air contaminant whose discharge results, or may result in only moderate and essentially localized effects; or where the multiplicity of sources of the contaminant in any given area require an overall reduction of the atmospheric burden of that contaminant.
- C** An air contaminant whose discharge may result in localized adverse effects of an aesthetic or nuisance nature.
- D** An air contaminant whose discharge will not result in measurable or observable effects on receptors, nor add to an existing or predictable atmospheric burden of that contaminant which may cause adverse effects considering properties and concentrations of the emissions, isolated conditions, stack height and other factors.

*Source: New York State Department of Environmental Conservation, Title 6, Chapter III, Subchapter A, Section 212.

Detailed operating procedures for maintaining air emissions from the pilot-scale AS/SVE system to within these established limits are given in the Air Monitoring section of the System Installation Specifications (Work Plan, Appendix B).

The estimated VOC emission rates for this system (prior to treatment) is 0.4 lb/hr. treatment efficiencies in the range of 90 to 99% are anticipated.

APPENDIX A
NYSDEC - Letter
Dated April 5, 1995



Michael D. Zagata
Commissioner

April 5, 1995

Mr. David Brayack, P.E.
Halliburton NUS Environmental Corporation
661 Anderson Drive
Pittsburgh, PA 11501-4250

RE: NWIRP-Bethpage
Calverton-NWIRP
Site Numbers: 130003B 152136

Dear Mr. Brayack:

Enclosed please find three (3) copies of the permit form for a Process, Exhaust or Ventilation System along with a copy of the instruction manual.

A permit application need not be submitted for the soil vapor extraction pilot test programs at the above-referenced sites as long as there is a treatment system in place (such as a vapor phase granular activated carbon system) at each site. A permit application will be required for each site as part of the design reports for the full-scale soil vapor extraction systems.

If you have any questions regarding this matter, please feel free to contact me at (518) 457-3395 or Jeff McCullough at (518) 457-3976.

Very truly yours,

A handwritten signature in dark ink, appearing to read "John D. Barnes".

John D. Barnes, P.E.
Environmental Engineer 2
Bureau of Eastern Remedial Action
Div. of Hazardous Waste Remediation

cc: S. Ervolina
S. McCormick
M. Chen
J. McCullough
J. Colter (Navy)